

538,311

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



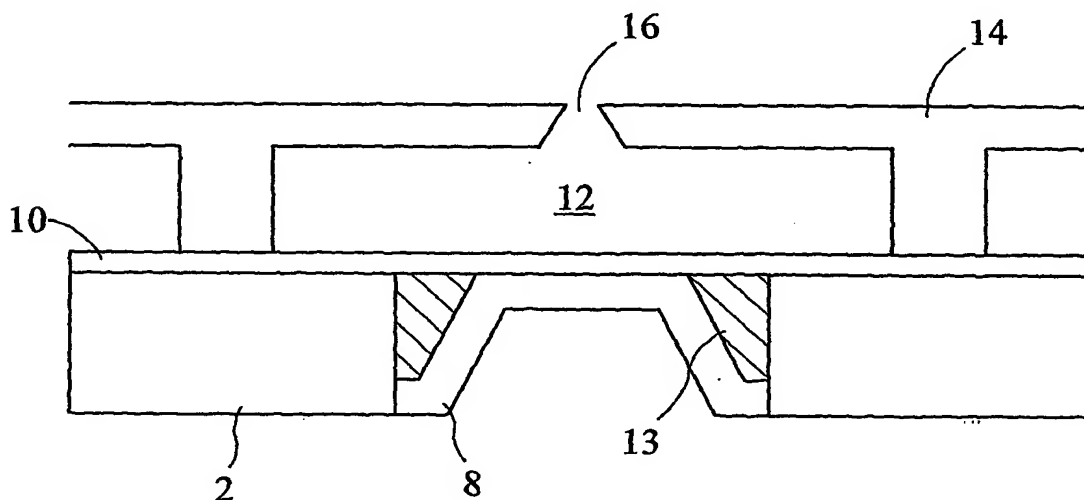
(43) International Publication Date
8 July 2004 (08.07.2004)

PCT

(10) International Publication Number
WO 2004/056572 A2

- (51) International Patent Classification⁷: **B41J 2/14** (74) Agents: GARRATT, Peter, Douglas et al.; Mathys & Squire, 100 Gray's Inn Road, London WC1X 8AL (GB).
- (21) International Application Number: PCT/GB2003/005626 (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (22) International Filing Date: 22 December 2003 (22.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 0229655.6 20 December 2002 (20.12.2002) GB (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant (*for all designated States except US*): XAAR TECHNOLOGY LIMITED [GB/GB]; Science Park, Cambridge CB4 0XR (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (*for US only*): TEMPLE, Stephen [GB/GB]; The Windmill, Impington, Cambridge CB4 9NU (GB). HARVEY, Robert [GB/GB]; 44 Windsor Road, Cambridge CB4 3JN (GB). LOWE, Robert, Jonathan [GB/GB]; 37 St. Kilda's Avenue, Cambridge CB4 2PN (GB). DRURY, Paul, Raymond [GB/GB]; 8 New Road, Great Chishill, Royston, Hertfordshire SG8 8ST (GB).
- Published:
— *without international search report and to be republished upon receipt of that report*
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(54) Title: DROPLET DEPOSITION APPARATUS



(57) Abstract: A drop on demand ink jet printer, has a passive component (14) defining ink ejector chambers (12) with respective ejection nozzles (16); and an actuator component comprising a body (2) with an opening and an actuator structure (8) located within the opening. The actuator structure is formed of piezoelectric material by moulding from a slurry or vacuum forming of flexible sheets using formers that are burnt away. MEM's techniques may also be employed to build the structure on a silicon wafer using a succession of masked deposition; etch back and similar process steps.

WO 2004/056572 A2